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PATENT APPLICATION
DOCKET NO. 10001006-1

**IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE**

INVENTOR(S): Laurence M. Hubby, Jr.

CONFIRMATION NO.: 3883

SERIAL NO.: 09/859,648

GROUP ART UNIT: 2614

FILED: May 16, 2001

EXAMINER: Brian P. Yenke

SUBJECT: Optical System for Full Color, Video Projector Using Single Light Valve with Plural Sub-Pixel Reflectors

**MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
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SIR:

PETITION UNDER 37 CFR §1.181

The Office has required restriction between group I (claims 1-17) and group II (claims 18-37). Applicant elected group II with traverse within a response filed concurrently herewith.

Applicant hereby petitions the director to set aside the Examiner's restriction requirement dated June 21, 2005 because the Office has failed to establish that the inventions of the groups are distinct under MPEP 806.05(c); the Office has failed to establish (a) separate classification, (b) separate status in the art when they are classifiable together, or (c) a different field of search under MPEP 808.02; and there is no serious burden for examination on the

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merits under MPEP 803. The pending claims are reproduced in the attached Appendix.

Applicant traverses the restriction inasmuch as the Office has failed to establish distinction of the alleged inventions under MPEP 806.05(c), and even if distinction has been established, restriction is improper after three previous examinations of the claims under MPEP 808.02 (8th ed., rev. 2) and MPEP 803 (8th ed., rev. 2).

Initially, the Office relies upon MPEP 806.05(c) in support of the restriction of inventions and which states that the inventions are distinct if the combination *does not* require the particulars of the subcombination for patentability (to show novelty and unobviousness) and the subcombination can be shown to have utility either by itself or in other and different relations.

There is no evidence of record that the claims 1-17 requires the particulars of the subject matter of claims 18-37 for patentability. Indeed, *claims 1-17 have been allowed since the original filing and independent claim 18 has been examined and rejected three times*. Accordingly, it is nonsensical to state claims 1-17 of group I are patentable for the particulars of group II when the claims of group I have been allowed and the claims of group II have been examined and rejected and have not been indicated to recite allowable subject matter. *It may be assumed that claims 1-17 are allowed for reasons other than the particulars of claims 18-37 since claims 18-37 have been rejected no less than three times and currently remain rejected.* By definition, the first requirement for restriction under 806.05(c) for distinct inventions is not met and the restriction is improper for at least this reason.

Further, under the second requirement of MPEP 806.05(c) for proper restriction, apart from bald, conclusory allegations of the Office, there is no evidence that the subcombination has separate utility apart from the combination. For at least the above-mentioned compelling reasons, Applicant respectfully asserts that the Office has failed to establish under MPEP 806.05(c) that restriction is proper and Applicant respectfully submits the restriction is not proper especially in consideration of MPEP 808.02 and MPEP 803 discussed

below.

Applicant refers the Examiner to MPEP 808.02 (8th ed., rev. 2) entitled Related Inventions. It is stated in such MPEP section that where related inventions as claimed are shown to be distinct under MPEP §806.05(c)-(i) (subsection c is the alleged rationale for issuing the restriction requirement in the subject application), the Examiner, in order to establish reasons for insisting upon restriction, must show by appropriate explanation one of the following: (a) separate classification, (b) separate status in the art when they are classifiable together, or (c) a different field of search. It is further stated in MPEP 808.02 that where the classification is the same and field of search is the same and there is no clear indication of separate future classification and field of search, no reasons exist dividing among related inventions. The Office has failed to provide any explanation to support restriction in the present application contrary to MPEP 808.02.

In view of the following prosecution history of the present application up to this point, it is clear that restriction is not proper. More specifically, Applicant notes the prosecution of the subject application has proceeded as follows:

First Office Action mailed December 9, 2003 allowing claims 1-17 and rejecting claims 18-20.

First Office Action Response mailed March 9, 2004, adding new claims 21-29 which depend directly or indirectly from independent claim 18.

Second Office Action mailed May 26, 2004 allowing claims 1-17 and rejecting claims 18-29.

Second Office Action Response mailed August 25, 2004 which added new claims 30-36. The undersigned and the Examiner discussed the Second Office Action during a telephonic interview.

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Third Office Action mailed January 13, 2005 allowing claims 1-17 and rejecting claims 18-36.

Third Office Action Response mailed April 13, 2005 which added new claim 37. The undersigned and the Examiner discussed the Third Office Action during a telephonic interview.

Accordingly, as set forth above, the Office has searched and examined claims of both groups three previous times. The only rejected independent claim (i.e., claim 18) has been examined three times in its original form.

The restriction requirement issued June 21, 2005 is entirely void of identifying any indication of separate future classification or field of search. Section B of MPEP 808.02 states that separate status in the art may be shown by citing patents which are evidence of such separate status, and also separate field of search. *No patents have been cited or other evidence offered to indicate the alleged separate status. In addition no separate field of search is required inasmuch as the pending independent claims have been examined on the merits three times*. There is no indication that a different classification is provided or a different field of search is required. No clear indication of separate future classification and field of search is provided. As mandated by MPEP 808.02, no reasons exists for dividing among related inventions.

Applicant further contends that any restriction is improper for at least the following reasons.

First, the Examiner has apparently already searched and examined the pending claims which are now the subject of restriction. Accordingly, now requiring elimination of any set of claims will not reduce the scope of searching, and thus there are no efficiencies gained by imposing a restriction requirement. In addition, restriction at this late time is not timely, and does not have any sense of fairness to Applicant.

Restriction is not proper since there is increased burden on the U.S.

Patent and Trademark Office, on the Applicant and ultimately on the public in prosecuting multiple separate patent applications. For Applicant, splitting the invention into multiple cases increases costs associated with government fees, prosecution fees, and maintenance fees for multiple patents. For the PTO, there are increased costs associated with conducting multiple searches in multiple applications and multiple examinations for an invention that already has been searched and examined. It further ultimately produces a burden on the pertinent public that will review Applicant's commonly patented technology. Such people will be compelled to unnecessarily review multiple issued patents and file histories.

Pursuant to MPEP 803 (8th ed., rev. 2), it is stated that *if the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions*. In view of the prior three examinations of the present application, Applicant respectfully submits no serious burden exists and Applicant respectfully requests withdrawal of the restriction requirement for this additional reason.

As set forth above, the Office has failed to establish that the inventions are distinct under MPEP 806.05(c) and restriction is improper for at least this reason. Further, even if the inventions are distinct, restriction is not proper under MPEP 808.02 and MPEP 803 in view of the extensive previous prosecution of the present application including *examination of the claims three previous times on the merits* and two interviews of the undersigned and the Examiner

Applicant respectfully asserts that the Examiner's restriction requirement is improper, and requests that the Examiner withdraw the restriction requirement and consider the already examined claims in this application at this time.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Laurence M. Hubby, Jr.

Dated: 7/21/05

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**APPENDIX A**

The claims pending Application Serial No. 09/859,648 are reproduced in the following Listing of Claims:

Listing of Claims:

- 1 1. [Original] A full color video projector system comprising:
- 2 a. a light source, producing a full spectrum beam in a first direction;
- 3 b. a splayed array of red, green, and blue dichroic reflector color
- 4 filters, said splayed array being located downstream from said light source and
- 5 being arranged so as to split said beam into red, green, and blue beam
- 6 components and re-direct them in a second direction;
- 7 c. a lenticular lens array, said array being transverse to said beam
- 8 components traveling in said second direction, said lens array comprised of a
- 9 plurality of elongated cylindrical lenses, said cylindrical lenses being arranged in
- 10 parallel, co-planar relation, each of said lenses outputting a red, green, and blue
- 11 color stripe illumination pattern at a lens array focal plane;
- 12 d. a relay optic downstream from said lens array focal plane in said
- 13 second direction, redirecting an incident composite of said red, green, and blue
- 14 illumination pattern in a third direction;
- 15 e. a reflective micro-mirror light valve downstream from said relay
- 16 optic in said third direction, said light valve including three sub-pixels for every
- 17 full-color screen pixel in a full color video image, said screen pixels being
- 18 arranged in parallel stripes which correspond to the size and configuration of
- 19 said color stripe illumination pattern outputted by said lenticular lens array, each
- 20 of said sub-pixels having an actuated state in which at least a portion of said
- 21 color stripe illumination pattern is reflected in a fourth direction, and an
- 22 unactuated state in which at least a portion of said color stripe illumination
- 23 pattern is reflected in a fifth direction;
- 24 f. a projection lens, said projection lens having an input port directed
- 25 toward said light valve, and an output port directed toward and focused upon a
- 26 projection screen; and,

27 g. light valve address circuitry interconnected to each of said sub-
28 pixels, said address circuitry actuating appropriate sub-pixels to redirect
29 corresponding portions of said color stripe illumination pattern in said fourth
30 direction and upon said input port of said projection lens, in accordance with
31 corresponding video image information

1 2. [Original] A projector system as in claim 1 further including an
2 optical stop between said focal plane and said relay optic in said second
3 direction, said optical stop having an aperture sized to pass selected portions of
4 said red, green and blue beam components.

1 3. [Original] A projector system as in claim 2 in which said selected
2 portions are approximately 1/3 of each said red, green, and blue beam
3 components.

1 4. [Original] A projector system as in claim 1, further including a
2 condenser lens, said lens being located downstream from said light source so as
3 to focus said beam in said first direction.

1 5. [Original] A projector system as in claim 1, in which said light
2 source is an arc lamp.

1 6. [Original] A projector system as in claim 1, in which said red and
2 green color filters are splayed apart a predetermined angle, and said green and
3 blue color filters are splayed apart said predetermined angle.

1 7. [Original] A projector system as in claim 1, in which said relay
2 optic contains at least one reflective element, and is located approximately mid-
3 way between said focal plane and said light valve.

1 8. [Original] A projector system as in claim 1 in which said optical
2 relay images said color stripe illumination pattern on said light valve in a 1:1
3 ratio.

1 9. [Original] A projector system as in claim 1 in which said light valve
2 address circuitry includes a light valve controller connected to a column driver
3 and a row driver, and in which said column driver is connected to one
4 connection on each of said sub-pixels, and in which said row driver is connected
5 to another connection on each of said sub-pixels.

1 10. [Original] A full color video projector system comprising:

2 a. light means for producing a full spectrum beam in a first direction;

3 b. means downstream from said light means for splitting said beam
4 into red, green, and blue beam components, and for re-directing them in a
5 second direction;

6 c. means for outputting a red, green, and blue color stripe illumination
7 pattern at a focal plane, said outputting means being transversely positioned to
8 said beam components traveling in said second direction;

9 e. optical relay means downstream from said lens array focal plane in
10 said second direction, for redirecting an incident composite of said red, green,
11 and blue illumination pattern in a third direction;

12 f. light valve means downstream from said relay means in said third
13 direction, for alternatively reflecting at least a portion of said color stripe
14 illumination pattern either in a fourth direction or in a fifth direction;

15 h. a projection lens, said projection lens having an input port directed
16 toward said light valve means, and an output port directed toward and focused
17 upon a projection screen; and,

18 g. means controlling said light valve means, for reflecting at least a
19 portion of said color stripe illumination pattern in said fourth direction, upon said
20 input port of said projection lens, in accordance with modulation information
21 corresponding to a video image.

1 11. [Previously Presented] A projector system as in claim 10 in which
2 said optical relay means contains at least one reflective element.

1 12. [Original] A projector system as in claim 10 in which said optical
2 relay means images said color stripe illumination pattern on said light valve
3 means in a 1:1 ratio.

1 13. [Original] A projector system as in claim 10 in which said light
2 valve means includes a plurality of full-color screen pixels corresponding to a full
3 color video image, said screen pixels being arranged in parallel stripes which
4 correspond to the size and configuration of said color stripe illumination pattern.

1 14. [Original] A projector system as in claim 13 in which each of said
2 screen pixels includes three sub-pixels, each of said sub-pixels having an
3 actuated state in which at least a portion of said color stripe illumination pattern
4 is reflected in said fourth direction, and an unactuated state in which at least a
5 portion of said color stripe illumination pattern is reflected in said fifth direction.

1 15. [Original] A projector system as in claim 10, in which said light
2 means is an arc lamp.

1 16. [Original] A projector system as in claim 10 further including an
2 optical stop between said focal plane and said relay optic means in said second
3 direction, said optical stop having an aperture sized to pass selected portions of
4 said red, green and blue beam components.

1 17. [Original] A projector system as in claim 16 in which said selected
2 portions are approximately $1/3$ of each said red, green, and blue beam
3 components.

1 18. [Original] A reflective micro-mirror light valve, comprising: a
2 plurality of full-color screen pixels, said screen pixels being arranged end to end
3 to form parallel stripes, said parallel stripes corresponding to the size and
4 configuration of a color stripe illumination pattern, each of said screen pixels
5 including three sub-pixels, said sub-pixels including a reflective surface having an
6 actuated state in which at least a portion of said color stripe illumination pattern
7 is reflected in one direction, and an unactuated state in which at least a portion
8 of said color stripe illumination pattern is reflected in another direction.

1 19. [Original] A light valve as in claim 18 further including light valve
2 address circuitry interconnected to each of said sub-pixels, said address circuitry
3 actuating appropriate sub-pixels in accordance with data corresponding to a
4 video image.

1 20. [Original] A light valve as in claim 19, in which said light valve
2 address circuitry includes a light valve controller connected to a column driver
3 and a row driver, and in which said column driver is connected to one
4 connection on each of said sub-pixels, and in which said row driver is connected
5 to another connection on each of said sub-pixel.

1 21. [Previously Presented] A light valve as in claim 18 wherein the one
2 and the another directions are the only directions in which light of the color
3 stripe illumination pattern is reflected by the reflective micro-mirror light valve.

1 22. [Previously Presented] A light valve as in claim 18 wherein
2 individual ones of the sub-pixels are configured to reflect only one color of the
3 color stripe illumination pattern during all operations of the reflective micro-
4 mirror light valve.

1 23. [Previously Presented] A light valve as in claim 18 wherein
2 individual ones of the full-color screen pixels are configured to simultaneously
3 reflect light of the color stripe illumination pattern having at least two different
4 colors.

1 24. [Previously Presented] A light valve as in claim 18 wherein
2 individual ones of the full-color screen pixels are configured to simultaneously
3 reflect light of the color stripe illumination pattern having three different colors.

1 25. [Previously Presented] A light valve as in claim 18 wherein the
2 color stripe illumination pattern comprises a plurality of different colors which
3 are repetitively alternated in a common direction at a moment in time.

1 26. [Previously Presented] A light valve as in claim 25 wherein light of
2 the alternating different colors of the color stripe illumination pattern is
3 simultaneously present during operation of the reflective micro-mirror light valve.

1 27. [Previously Presented] A light valve as in claim 25 wherein an
2 ordering of the different colors does not change during all operations of the
3 reflective micro-mirror light valve.

1 28. [Previously Presented] A light valve as in claim 18 wherein the
2 parallel stripes collectively have a size substantially equal to the size of the color
3 stripe illumination pattern lying within an illumination stripe focal plane upstream
4 of the reflective micro-mirror light valve.

1 29. [Previously Presented] A light valve as in claim 18 wherein an area
2 defined by all of the full-color screen pixels of the reflective micro-mirror light
3 valve is substantially equal to an area of the color stripe illumination pattern
4 within an illumination stripe focal plane upstream of the reflective micro-mirror
5 light valve.

1 30. [Previously Presented] A light valve as in claim 18 wherein the
2 parallel stripes of the full-color screen pixels correspond to the color stripe
3 illumination pattern upstream from the reflective micro-mirror light valve.

1 31. [Previously Presented] A light valve as in claim 18 wherein a
2 plurality of the sub-pixels individually reflect light of the same color during all
3 operations of the reflective micro-mirror light valve wherein light is reflected to
4 create an image.

1 32. [Previously Presented] A light valve as in claim 18 wherein the
2 color stripe illumination pattern is generated prior to being reflected by the sub-
3 pixels.

1 33. [Previously Presented] A light valve as in claim 18 wherein the
2 colors reflected at a given moment in time are different for all immediately
3 adjacent ones of the sub-pixels located in a common direction.

1 34. [Previously Presented] A light valve as in claim 18 wherein the
2 full-color screen pixels individually comprise a substantially square shape and
3 respective ones of the sub-pixels of an individual full-color screen pixel
4 comprise substantially rectangular shapes collectively corresponding to the
5 substantially square shape of the respective individual full-color screen pixel.

1 35. [Previously Presented] A light valve as in claim 28 wherein the
2 color stripe illumination pattern is generated prior to being reflected by the sub-
3 pixels.

1 36. [Previously Presented] A light valve as in claim 29 wherein the
2 color stripe illumination pattern is generated prior to being reflected by the sub-
3 pixels.

1 37. [Previously Presented] A light valve as in claim 18 wherein the
2 full-color screen pixels comprise full-color screen pixels of a single chip.